Quantum

Manufactured and distributed by:

Quantum

Quantum s.p.a
Via Piero e Alberto Pirelli, 6 - 20126 MILANO
www.qtm.it - info@qtm.it

QTM10

User manual

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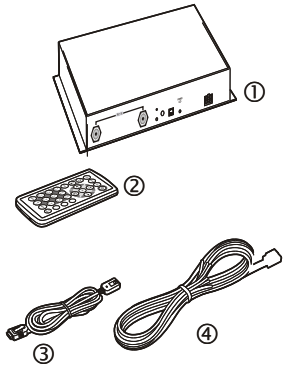
EQUIPMENT

Each box contains:

① RECEIVER
② REMOTE CONTROL
③ REMOTE INFRARED SENSOR
④ POWER CAR CABLE
⑤ USER MANUAL



Warranty

Warranty

Dear customer,
thank you for choosing our product, which has been designed and manufactured to the highest quality standards.

- The product is covered by a warranty, for a period of 24 months, which is testified from a delivery document indicating the date of purchase of the product and the dealer's name.
- The customer is entitled to the rights provided for by Legislative Decree n° 24/2002
- The warranty covers the replacement or the repair operation of all the parts found to have manufacturing defects.
- The warranty does not cover:
  - › failures caused by carelessness or transport.
  - › failures caused by installation not in accordance with the instructions
  - › failures caused by improper, incorrect or not in accordance with the instructions, use of the device
- The manufacturer cannot be held responsible for accidental damages to persons, pets, or things, as a consequence of non-conformity with all the precautions furnished with the instructions manual.
  - › In the event you require service, during the warranty period, you should fill in and show the present certificate, together with a valid receipt issued by the dealer, showing the date of purchase of the product.

WARRANTY VOUCHER

DEALER'S STAMP AND SIGN

Model .....

Serial number .....

Defect found .....

Customer signature

Date __/__/__ .....

To return correctly filled in together with the purchase receipt

Warning

CAUTION

⚠ This symbol means important instructions. Failure to heed them can result in serious injury or death

DO NOT OPERATE ANY FUNCTION THAT TAKES YOUR ATTENTION AWAY FROM SAFELY DRIVING YOUR VEHICLE

Any function that requires your prolonged attention should only be performed after coming to a complete stop.
Always stop your vehicle in a safe location before performing these functions. Failure to do so may result in an accident.

USE THIS PRODUCT FOR MOBILE 12/24 Vcc APPLICATIONS AND NEGATIVE GROUND

Any misuse that diverts from the designed application may result in fire, electric shock or other injury.

DO NOT DISASSEMBLE OR ALTER THE UNIT

Doing so may result in accidents or injuries.

USE THE CORRECT AMPERE RATING WHEN REPLACING FUSES

Failure to do so may result in fire or electric shock

HALT USE IF A PROBLEM APPEARS

Failure to do so may cause personal injury or damage to the product.

DO NOT USE OLD BATTERIES

When inserting batteries in the remote control, be sure to observe proper polarity as instructed.
Rupture or chemical leakage from the battery may cause malfunction ing, break or injury.

Precautions and Safety

PRECAUTIONS

TEMPERATURE

Be sure the temperature inside the vehicle is between +45°C and 0°C before turning your unit on.

FUSE REPLACEMENT

The replacement of the fuses must be of the same amperage. If one fuse blows more than once, carefully check all electrical connections to prevent short circuits. Also have your vehicle' s voltage regulator checked.

MAINTENANCE

If you have problems, do not attempt to repair the unit yourself. Require assistance at the nearest retailer or service station.

INSTALL LOCATION

Install in dry, safe locations, away from dangers and humidity.

INSTALLATION PRECAUTIONS

Use only in cars with a 12/24 Vcc negative ground.

Before connecting the device remove the negative terminal from the battery to prevent short circuits.

Do not use bolts or nuts related to any safety system (airbag, etc.), To make ground connection.

CAUTION

WATCHING TV WHILE DRIVING MAY RESULT IN SERIOUS ACCIDENTS, INJURIES OR DEATH!

SAFETY

VIDEO OUTPUT

In order to ensure vehicle safety, the driver's side screen must be connected to the front video output connector. This will ensure the driver won't be able to watch Tv while the vehicle is moving, if the handbrake wire is properly connected. The driver will be able to watch Tv once the handbrake is pulled. The rear passenger screens, connected to the rear video output connectors, do not fall under this restriction.

Warning

QTM10 complies with:

E24: according to ECE R10

DiGiTVi: specifications D-Book ver.1.0 - june 2004 and following updates where available

TÜV: the product suits TÜV norms and the quality certificate n° 951001196

CAUTION:

Your receiver is supplied with an operating system and resident programs.

Furthermore, while using it, you could have downloaded other softwares.

You should undertake not to use improperly any of these types of software or parts of them.

Improper use means: duplication, distribution, tampering. In other words, that the only allowed usage is the one described in this user manual.

Technical features

Mobile DVB-T signal reception

Autotracking channels search

MultiCA System (NagraVision, Irdeto, Conax)

Favourite Channels List

Update software in local

2 audio/video input (DVD/CD, ...)

3 video output for three separated monitor

1 audio stereo output

Audio/video digital quality

Easy and fast plug-and-play installation

DVB-T
Network Interface Module - DVB-T COFDM
Dual-RF Diversity with Anti-Doppler Enhancement
DVB / MPEG2 Transport and De-Multiplexing
ISO/IEC 13818-1 MPEG-2 Transport Stream Compliance
Nordig II and ETS 300 744 DVB-T Full Compliance
Full 47~860 MHz Frequency Range for VHF and UHF
OFDM Demodulation 2K and 8K FFT for SFN and MFN
Symbol Rates : up to 34 MS/s
Automatic Adjacent-Channel Interface Cancellation
Supports QPSK and 16/64QAM Constellations
Supports 1/4, 1/8, 1/16, 1/32 Guard Interval
Supports FEC Decoding : 1/2, 2/3, 3/4, 5/6, and 7/8
Supports Reed-Solomon (204,188) ETS 300 477

Video Decoding and OSD
ISO/IEC 13818-2 MPEG-2 Video MP@ML Compliance
ISO/IEC 11172-2 MPEG-1 Video Compliance
Resolution: 720x576 for PAL
16:9/4:3, 3:2 Letterbox and Pan/Scan
65K Colour OSD

Audio Decoding
ISO/IEC 13818-3 MPEG-2 Audio Compliance
ISO/IEC 11172-3 MPEG-1 Audio Compliance
Stereo / MTS

Front Panel
IR Remote Connector
Power LED
Car Power Connector 12/24V
Antenna-In : F-type x 2

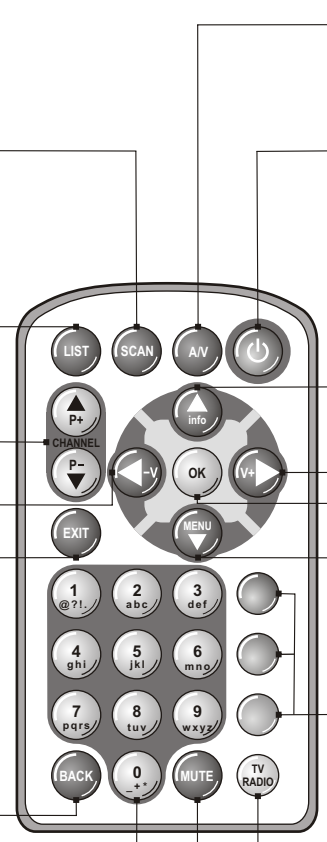
Rear Panel
Stereo Audio Input (RCA) x 2
Composite Video Input (RCA) x 2
Stereo Audio Output (RCA) x 1
Mono Audio Output (RCA) x 1
Composite Video Output (RCA) x 3

Safety and Reliability
Operation temperature : -5 C ~ +55 C
Storage temperature : -45 C ~ +85 C

Comsuptions
0.94 A in full operation powering two antennas
0.65 A in stand by
500 microA when off (car key off)

Mechanical Specification
Dimensions (WxDxH): 275mm x 140mm x 42mm

Remote Control



A/V
to select audio/video inputs

SCAN
to start autoscan

POWER
to switch on/off the unit

LIST
to view channel list

UP BUTTON
to view info program or navigation button

P+/-
zapping channels

RIGHT BUTTON
navigation or volume adjust button

LEFT BUTTON
navigation or volume adjust button

OK
to select a function or to confirm the selection

EXIT
to exit from the selected option

DOWN BUTTON
navigation button

BACK
to return to the previous page (where available)

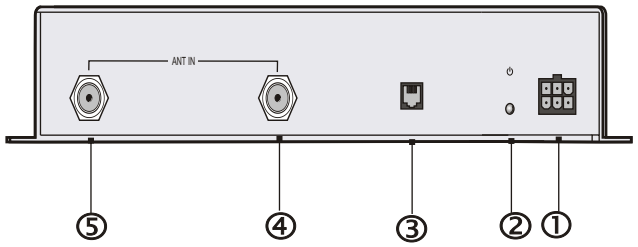
RED, BLUE, GREEN
navigation buttons

0...9
alpha/numerical button

TV/RADIO - YELLOW
to toogle Tv and Radio list

MUTE
to switch on/off the audio input

Front Panel



① **6 POLE CONNECTOR - CAR POWER**
Input connector to power and control the unit. For the connection's specifications read page 20

② **POWER LED**
Voltage led indicator

③ **Rj11 CONNECTOR**
Connector for the remote control sensor

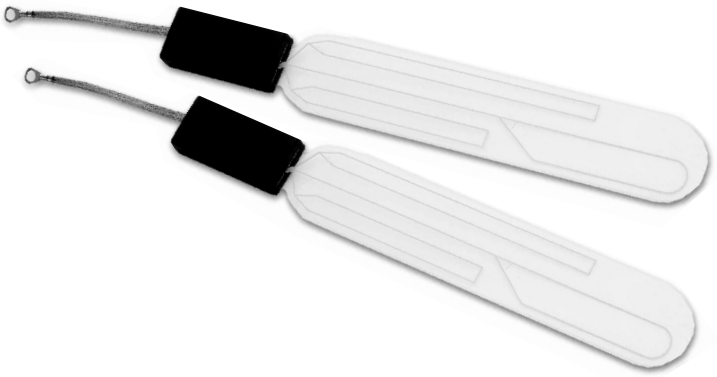
④ **ANTENNA INPUT -1**
First Tv antenna input

⑤ **ANTENNA INPUT -2**
Second Tv antenna input

WARNING:
Output voltage is always on (12Vcc) at the connectors F (ANT 1 and ANT 2) to power the antennas. DO NOT POWER THE ANTENNAS WITH DIFFERENT VOLTAGE

Installation and Connections

Quantum antenna



❖ TECHNICAL FEATURES

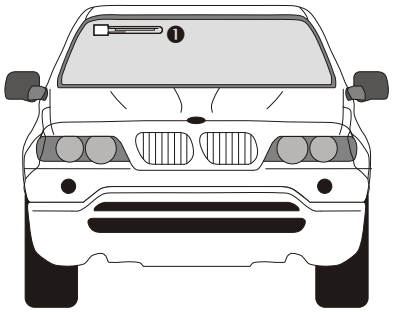
Operation frequencies:	174 - 230 (band III) 470 - 862 (bands IV - V)
Gain:	14 ± 2 dB
Cable type:	coaxial 75 ohm
Cable lenght:	5 m
Connector:	type F
Power:	12 Vcc
Consumption:	25mA min - 35 mA max
Temperature range :	- 40° <> +85° C
Protection class:	IP40
Size (L x B x H):	28 x 2,5 x 1,5 cm

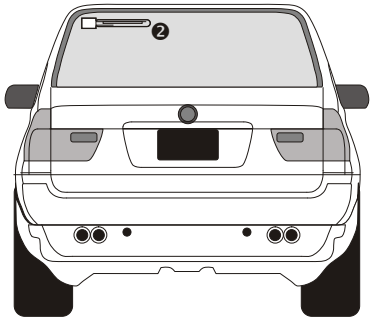
Installation and Connections

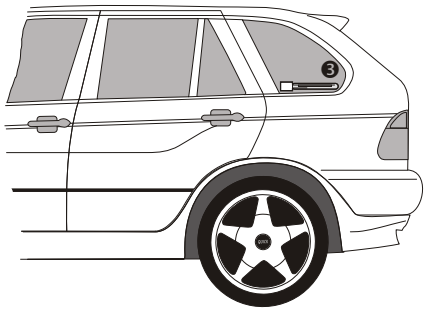
TV ANTENNAS

Use only active antennas, amplified with adequate gain, directly powered by the F antenna connectors (ANT IN) and suitable to the reception of the Digital Terrestrial signal (DVB-T).
Quantum Antennas, linked together with QTM10 receiver, have been manufactured in order to optimize the system's functioning.

WARNING: do not provide external power in case of use of different brand antennas, not to occur in doing so may result in product damages and in decay of warranty's terms.



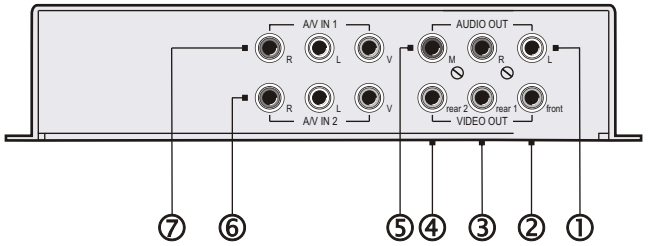




❖ INSTALLATION GUIDELINES

- Be sure to position the antennas as far away and opposing from each other as possible. For example, place the first antenna on the right side of the wind screen of the vehicle① and the second one on the left side of the rear window② or on the left rear vent wing③.
- Antennas must be installed as far away from the metal parts (vehicle's roof or vertical borders of the wind screen/rear vent wing) as possible.
- The bonnet or the boot (depending on the vehicle) can influence whether positive or negative - the signal reception. It's recommend to experiment where to place the antennas, whether on the higher or the lower part of the window. The higher part usually guarantees more protection from noises caused by motorcycles and scooters.
- Handle with care the coaxial cable setting in order to avoid damages due to vibration or crushing.
- Be sure that the connections have been correctly set and check the screwing of the connectors. Signal reception's problems are often caused by incorrect assembly.

Rear Panel



① **RCA L/R AUDIO OUTPUT - Stereo**

② **RCA VIDEO OUTPUT - Front**
Video output to connect to the front monitor's video input. Warning, signal is output only once the handbrake is pulled

③ **RCA VIDEO OUTPUT - Rear 1**
Video output to connect to a rear monitor video input. Signal is always available

④ **RCA VIDEO OUTPUT - Rear 2**
Video output to connect to a rear monitor video input. Signal is always available

⑤ **RCA AUDIO OUTPUT - Mono**

⑥ **AUDIO/VIDEO INPUT- A/V IN 2**
Audio/Video inputs to connect an auxiliary unit (e.g. Dvd player, rear camera, etc.). This input can be selected by remote control

.

⑦ **AUDIO/VIDEO INPUT- A/V IN 1**
Audio/Video inputs to connect an auxiliary unit (e.g. Dvd player, rear camera, etc.). This input can be selected by remote control

NOTE: video outputs and inputs according to PAL Standard

First Use

Be sure that every connection has been correctly set, as shown on the diagram at page 20-21

❖ Getting started

Turn the unit on

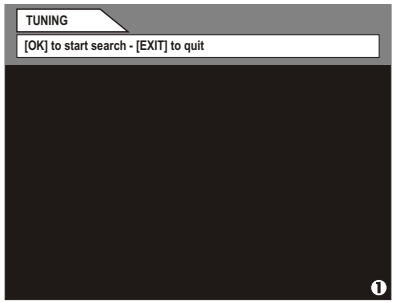
- POWER LED on the front panel is green: after a few seconds frame① will be shown on the screen .
  - › press [OK] button to start the automatic channel tuning

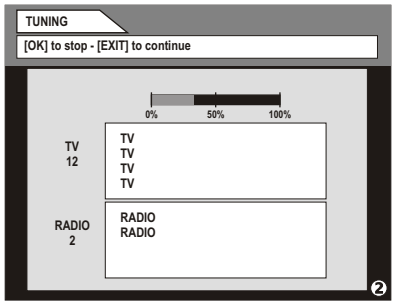
    It's possible to stop the tuning by pressing EXIT button. Frame② will be shown on the screen. Press [OK] button to confirm the tuning stop or the [EXIT] button to resume it.

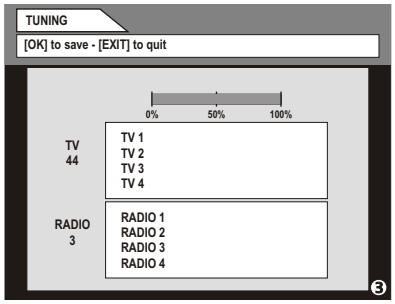
    At the end of the tuning frame③ will be shown on the screen.
    - › press [OK] button to store the channels in the TV LIST. The first channel in the up-to-date TV LIST will be shown on the screen.

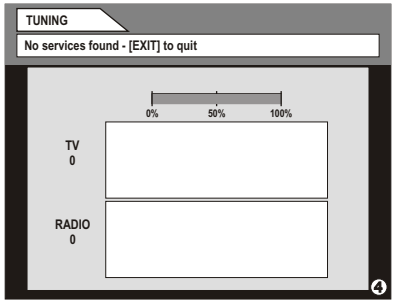
      If at the end of the tuning frame④ is shown on the screen, check the connections and the installation parameters of the receiver, then press in sequence [EXIT], [SCAN] e [OK] buttons to restart the tuning

- POWER LED on the front panel is switched off: check the connections and begin the getting started operations again.



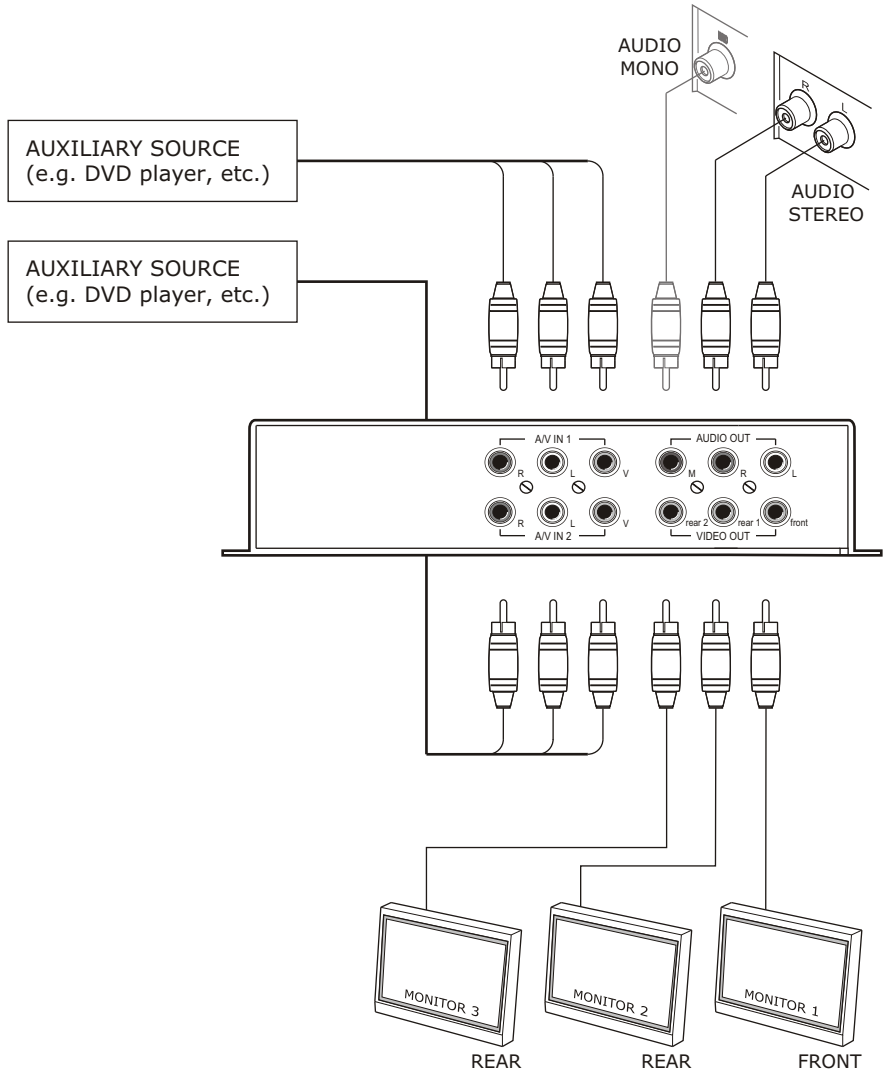




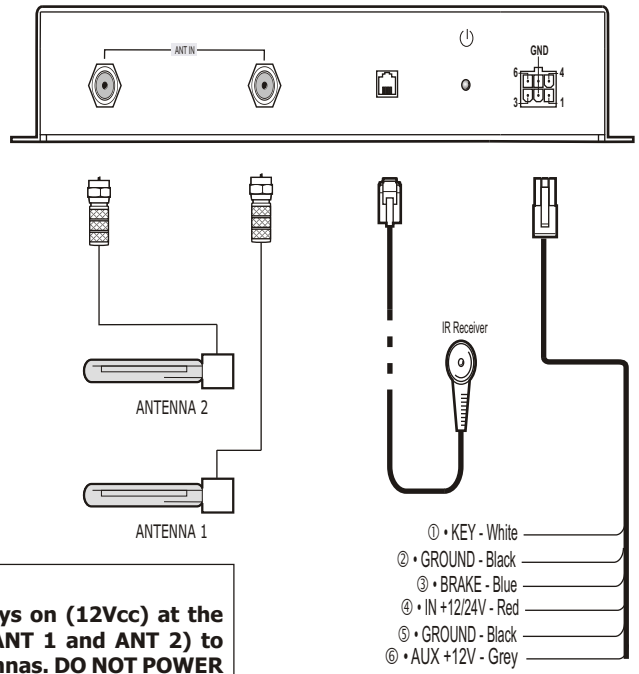


Installation and Connections

REAR PANEL



FRONT PANEL



WARNING:
Voltage is always on (12Vcc) at the connectors F (ANT 1 and ANT 2) to power the antennas. DO NOT POWER THE ANTENNAS WITH DIFFERENT VOLTAGE

①**KEY** (white) - **Ignition lead**
Connect to an accessory terminal in the fuse block controlled by the car ignition key (+12V=ON)

②**GROUND** (black) - **Power lead (-)**
Connect to the battery negative pole (car chassis)

③**BRAKE** (blue) - **Parking brake control lead**
Connect to parking brake of the car (video output enable)

④**+12/24V** (red) - **Power lead (+)**
Connect to a live terminal in the fuse block connecting to the car battery

⑤**GROUND** (black) - **Power lead (-)**
Connect to the battery negative pole (car chassis)

⑥**AUX +12V** (grey) - **Power output lead for accessory parts**
Connect to the device to feed (12V/30 mA max). The device is supplied with power when it is switched on.

❖ Autotracking and Autosearch

These innovative functions make the receiver's daily use easier.

They have the purpose to select a channel by the remote control and to show it without starting a tuning manual searching, in case of frequencies changing during the transmissions.
To optimize Autotracking and Autosearch functions it's necessary to follow carefully the instructions:

1. **Start an autoscan** to tune the available channels in that specific area by pressing [SCAN] button ①
2. **Create a FAVOURITE TV LIST** to organize in sequence your own favourite channels ②
3. **Select the FAVOURITE TV LIST as default** ③

If autosearch does not allow to tune all the favourite channels, start again the operations described at the point 1 and 2 in an other geographic area.

WARNING: channels marked with this symbol ⦸ are temporarily not available upon network coverage ④.

Daily Use

❖ How to switch the receiver on

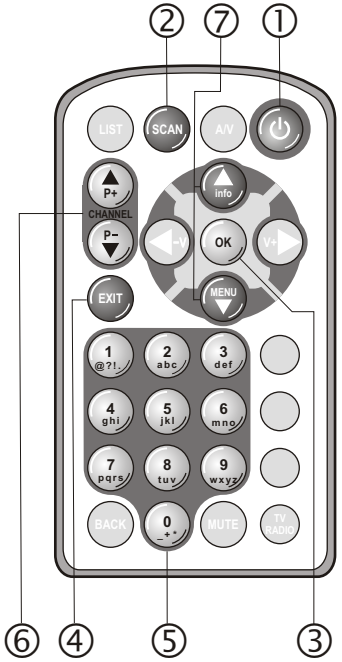
Use the [⏻] button on the remote control① to turn the receiver on/off

❖ How to select a channel

A Tv or Radio channel can be selected by three different modes:

- DIRECT: select the desired channel by using the numerical buttons ⑤
- ZAPPING: select the desired channel by using the up/down buttons[▲] e [▼]⑦ and press [OK]③ to confirm the selection.

  INFORMATION BAR will be previewed on the screen⑧ before the channel tuning.
- DIRECT ZAPPING: press [P+] [P-]⑥ to browse directly trough the channels without using the [OK]③ button.



Installation

WARNING:

⚠ Before installing the device read carefully the following instructions

HAVE THE INSTALLATION DONE BY QUALIFIED PERSONNEL

The installation and wiring of this unit require special technical skills and experiences. To ensure safety always have the installation done by experts

USE SPECIFIED ACCESSORY PARTS

Be sure to use only the specified accessory parts. Use of other than designed accessory parts may damage this unit or cause an incorrect functioning of the appliance

ARRANGE THE WIRING CORRECTLY

Route the electrical and audio/video cables and wiring away from moving parts or sharp or pointed edges. This will prevent crimping and damage to the wiring. If wiring passes through hole in metal, use a rubber grommet to prevent the wires insulation from being cut by the metal edge of the hole

DO NOT INSTALL IN LOCATIONS WITH HIGH MOISTURE OR DUST

Avoid installing the unit in locations with high incidence of moisture or dust. Moisture or dust that penetrates into this unit may result in product failure

WARNING

MAKE THE CORRECT CONNECTIONS

Failure to make the proper connections may result in product damage

USE ONLY IN CARS WITH A 12 / 24 Vcc NEGATIVE GROUND

Failure to do so may result in fire, electric shock or other injury

BEFORE WIRING DISCONNECT THE CABLE FROM THE NEGATIVE (-) BATTERY TERMINALS

Failure to do so may result in electric shock or injury due to electrical shorts

DO NOT SPLICE INTO ELECTRICAL CABLES

Never cut away cable insulation to supply power to other equipment. Doing so will exceed the current carrying capacity of the wire and result in fire or electric shock

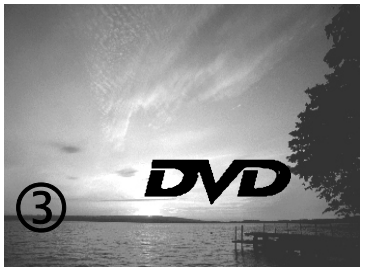
DO NOT USE BOLTS OR NUTS IN THE BRAKE OR STEERING SYSTEM TO MAKE GROUND CONNECTIONS

Bolts or nuts used for the brake or steering systems (or any other safety-related system), or tanks should NEVER be used for installations or ground connections

DO NOT INSTALL IN LOCATIONS WHICH MIGHT HINDER VEHICLE OPERATION, SUCH AS THE STEERING WHEEL OR GEARSHIFT

Doing so may obstruct forward vision or hamper movement etc., and result in serious accident

Audio/Video Switching

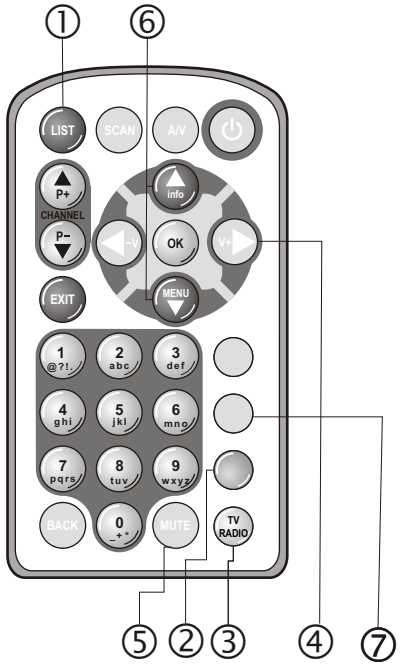


❖ Audio/Video Switching

Suppose to connect a device (e.g. Videogame console) to A/V IN1 input, and a second one (DVD player) to A/V IN2 input. The decoder can be set in three different modes that lead to the following configurations:

- **QTM10 on TV**
  FRONT and REAR monitors display Tv signal①
- **QTM10 on AV 1** (press [A/V] button)
  FRONT and REAR monitors display the signal coming from the device (e.g. a Videogame console) connected to A/V IN 1②
- **QTM10 on AV 2** (press [A/V] button)
  FRONT and REAR monitors display the signal coming from the device (e.g. a DVD player) connected to A/V IN 2③
- **QTM10 on Stand-by**
  FRONT monitor displays the signal coming from the device connected to A/V IN 2 ④

Daily Use



❖ How to select a channel in a TV/Radio List

- Press [LIST]① to show the Tv List
  › press [GREEN]② to toggle the general TV LIST or the FAVOURITE TV LIST if previously preset [see MENU]
- Press [TV/RADIO]③ (yellow) to show the RADIO LIST
  › press the same button to toggle between the Radio List or the previously selected TV LIST
- Select the desired channel

WARNING: **channels marked with this symbol ⃠ are temporarily not available** upon **network coverage** ⑧

❖ How to adjust the volume level

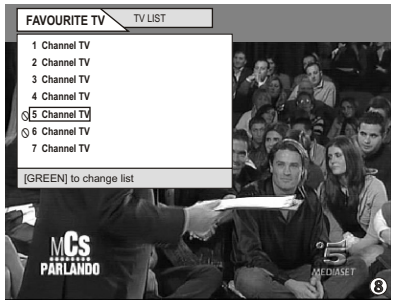
The volume level can be adjusted by using the [VOL+] [VOL-] buttons

❖ Mute

- Press [MUTE]⑤ button to switch on/off the audio output

❖ How to view program info

- Press [info]⑥ to view the short information about the selected program
- Press [BLUE]⑦ to get detailed informations.



❖ How to select the audio language

To select the desired language in case of multilanguage programs follow the instructions:

- Press [info]⑥ + [GREEN]② and select the desired language by using the up/down[▲] [▼]⑥ buttons

Menu

❖ MENU

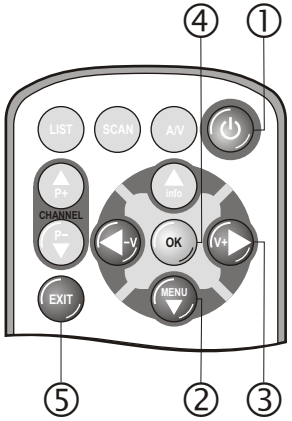
The main MENU⑦ is used to set user's preferences

Sub-menus:

- SETTINGS
- TV LIST
- DIAGNOSTICS

❖ How to show the Menu

- Press [MENU]②on the remote control



Audio/Video Switching

❖ Audio/video Inputs

The receiver enables the user to connect two auxiliary devices (e.g. Videogame console, Dvd player, etc..) to the audio/video input (A/V IN 1 and IN 2) and to select them by the remote control.

How to select audio/video inputs:

Switch the receiver on the Tv signal and proceed as follow to select the desired input:

- Press [A/V]①

  Frame 2② will be shown on the screen and, after a few seconds, the receiver displays the signal from A/V IN1 input [AV 1]

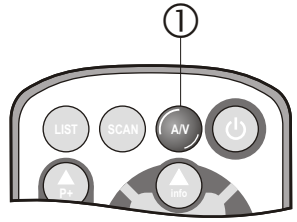
- Press [A/V]① again

  Frame 3 ③ will be shown on the screen and, after a few seconds, the receiver displays the signal from A/V IN2 input [AV 2]

- Press [A/V]① again

  Frame 4 ④ will be shown on the screen and, after a few seconds, the receiver displays TV signal [TV]

WARNING: FRONT monitor displays the signal only once the handbrake is pulled



Menu - DIAGNOSTICS

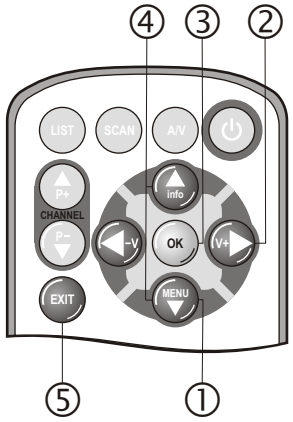
❖ DIAGNOSTICS

Receiver has two different diagnostics features:

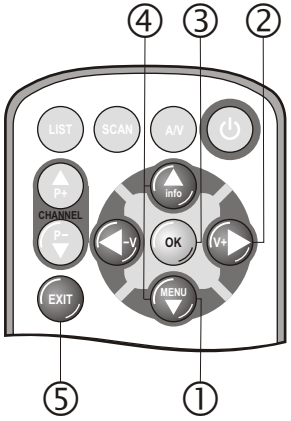
- SIGNAL LEVEL
- RECEIVER DATA

⬩ How to view the DIAGNOSTICS:

- press [MENU]①;
- select DIAGNOSTICS by using the right and left [◂] [▸]② buttons
- press [OK]③ to confirm the selection or [EXIT]⑤ to cancel it.



Menu - SETTINGS



❖ SETTINGS

This sub-menu shows the data related to:

- RECEIVER
- RESTORE
- CLOCK

WARNING: Do not accidentally change the parameters in order to avoid the misfunctioning of the device. Default settings are normally correct for standard installation. They can be restored through the RESTORE function ◆

❖ How to navigate the Settings Menu

- press [MENU]② to view the main menu on the screen
- select SETTINGS by using the right and left [◂] [▸]③ buttons.
- press OK to enter this sub-menu and then press it again till you get the required item
- select the desired function first by using the right and left buttons [◂] [▸]③ and then the up and down [▴] [▾]④ buttons
- press [OK]④ to confirm the selection and to move to the next function or [EXIT]⑤ to cancel the selection

Menu - SETTINGS

◆ RECEIVER⑥

- **TV OUT**
  Set tv out mode according your screen type⑦:
  - › 4:3 pan&scan
  - › 4:3 letter box
  - › 16:9
- **MENU LANGUAGE**
  To select the menu language

.

◆ RESTORE⑦

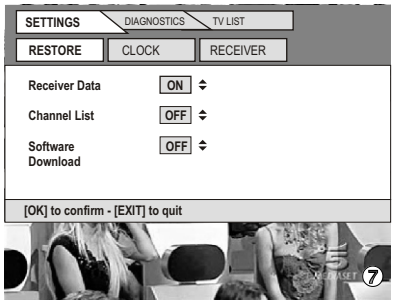
This function enables the user to reset the input data among these data categories:

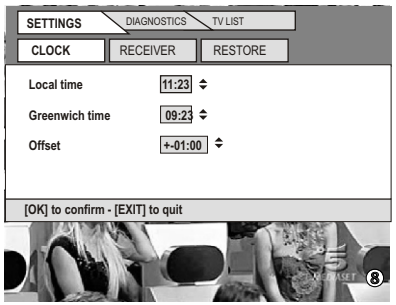
- **RECEIVER DATA**
  To reset settings, system and installation parameters
- **CHANNELS LIST**
  To delete all the channels lists
- **SOFTWARE UPDATE**
  To update the receiver software
  WARNING: This process must be carried out by experts

It's possible to make a complete data's restore by selecting all the items

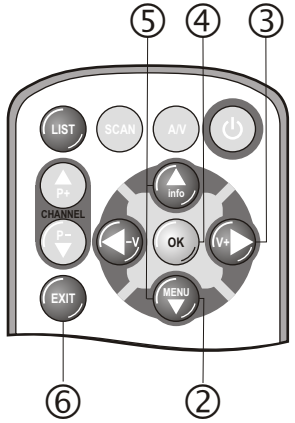
◆ CLOCK⑧

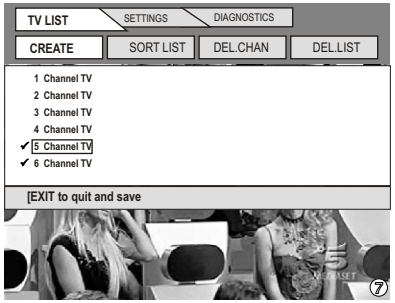
The receiver's clock will be automatically updated through the tv signal. It's possible, if desired, to change the time zone, set at GMT+1 by default

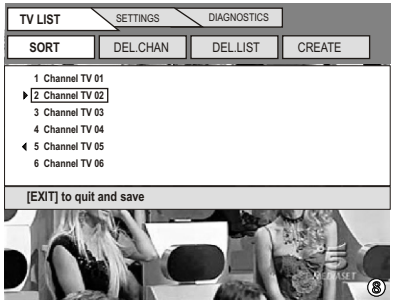




Menu - TV LIST







❖ How to manage the Favourite Tv List

It's possible to create a personal favourite Tv List.
TV LIST and RADIO LIST, include all the tuned channels, so they are not allowed to be personalized

1. How to create the Favourite Tv List:

- press [MENU]②
- select TV LIST and press [OK]④ to confirm
- select CREATE and press [OK]④ to confirm
- browse the list sequentially by using the up and down buttons [▲][▼]⑤ , or in groups of six channels by using right and left buttons [◀][▶]③ and select the channel
- press [OK]④ to confirm the selection. A tick signal ✓ will be shown next to the selected channel⑦
- If you want to cancel the selection press [OK]④ again and the tick mark ✓ will be deleted

2. How to delete a channel from the Favourite Tv List:

Follow the same procedure as shown at the point 1 and replace CREATE with DEL.CHAN.

3. How to sort the Favourite Tv List:

- press [MENU]②
- select TV LIST and press [OK]④to confirm
- select SORT LIST and press [OK]④to confirm
- browse the list sequentially by using the up and down buttons [▲][▼]⑤ or in groups of six channels by using the right and left buttons[◀][▶]③ and select the channel you want to move
- browse the list in the same way and click on the position where you want to move the selected channel. A tick mark ◀ will be shown next to the selected channel
- press [OK]④ to confirm the new position of the channel⑧

4. How to delete the Favourite Tv List:

Follow the same procedure as shown at the point 1 and replace CREATE with DEL.LIST